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CASE OF STRICTURE OF THE ŒSOPHAGUS

IN WHICH GASTROTOMY WAS PERFORMED.

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F. F. MAURY, M. D., Gastrotomy.

In July, 1868, I was consulted by H. D., æt. 25, who on the previous 17th of May, while at dinner, was suddenly seized with choking sensations and a violent fit of vomiting. He had partially finished his meal, and the matter ejected consisted merely of the food which had been last swallowed. Violent retching continued for nearly half an hour. For several days after, he experienced no difficulty in deglutition, and the incident just detailed had almost passed from his mind, when he was again attacked by similar symptoms, although more severe and prolonged. These paroxysms soon recurred almost daily, and he noticed that upon swallowing his saliva it shortly afterwards rose in his mouth, and necessitated constant expectoration. Deglutition at times was readily performed for several consecutive days, and during these periods of respite he ate voraciously. Again, for prolonged periods, not a morsel of food could be retained for more than a few moments, although his efforts to do so were persevering and repeated. His diet consisted solely of broths, soups, and an occasional glass of wine, and if a few ounces of these articles were retained, he congratulated himself. He had previously weighed one hundred and eighty pounds, and was a strong, hearty man, but he now began to emaciate and lose strength.

In July his condition was such as to induce him to seek my advice. Stricture of the œsophagus was at once suspected, and upon exploration with a gum-elastic bougie, a diminution in its calibre was readily detected near its cardiac orifice. At the first examination an instrument, somewhat below the medium size, was introduced into the stomach; but at no subsequent period could even a small one be made to pass the stricture; so that efforts to dilate it proving abortive, all procedures having this end in view were finally abandoned from fear of doing harm. The matters vomited consisted solely of what the patient had ingested. There was no history of cancer in his family, nor had any irritating substances ever been swallowed. There was a feeling of constriction and suffocation upon the ingestion of food, and if the article taken had any bulk, the patient seemed to recognize the spot where it was arrested as being somewhat above the stomach. He suffered no pain at the seat of stricture, neither could it be elicited by firm pressure or smart blows. Upon close interrogation he acknowledged having had, at the age of seventeen years, an indurated chancre and buboes, which were subsequently followed by a papular eruption.

At the man's earnest request, the probable issue of his case was candidly stated, but at the same time the possible benefit that might accrue from treatment was pointed out. The main indication was to sustain strength; and iodide of potassium and bichloride of mercury were exhibited, rather with a faint hope that they might act specifically than with any conviction that they would produce any material change at the seat of stricture. Several attempts were made to pass a tube into the stomach for the purpose of introducing food, all which proving unavailing, they were finally desisted from.

After the first of January, 1869, the tortures under which the poor fellow had been laboring were aggravated, and those precious moments

when he could allay in a measure, however slight, the agony of unsatisfied hunger, were of rarer occurrence. Emaciation had become extreme. There was gradual failure of strength until, in the early part of April, prostration was so great as to confine him to his bed, from which he could not rise without assistance. He was unable to perform the most trivial act for himself, and was as helpless as a child. Agonizing and most persistent pain, depriving him of all rest, both by night and day, now set in. Its seat was principally in the extremities, more especially along the superficial surfaces of the tibiæ, although referred, indeed, to the whole osseous system. It was of a dull, heavy, aching character, and unbearable upon the slightest pressure. His condition was very precarious for three weeks, when he began to rally, and he became able, after persevering efforts, to swallow small quantities of liquid food. He gained sufficient strength to leave his bed, and even went out into the open air for short walks; but this amelioration was of short duration.

About the middle of May he could no longer swallow anything, however minute in quantity. Brandy, beef-tea, and milk-punch were repeatedly given in teaspoonful doses, but they did not reach the stomach. Resort was now had to enemata. Brandy, beef-extract, and milk-punch were thrown into the rectum every four hours. As a rule they were well retained, and seemed to afford some degree of relief. The patient now began to earnestly importune for an operation. Gastrotomy was the only recourse that offered a shadow of a hope. He, however, seemed in no more imminent danger at this period than at many times previously. It was remembered that at one time when death appeared inevitable, there was a temporary change for the better, and there was no reason why this having taken place once, it might not recur. In view of these considerations, and of the desperate nature of the operation, I did not feel justified in yielding to the earnest solicitations of the patient.

The man continued to sink, and his fast-failing strength was sustained by enemata alone. The pain he had previously suffered was less intense, and could be well controlled by morphia, but he had still to bear the horrors of unsatisfied hunger. Curiously enough, there was at no time much complaint of thirst. Hunger caused the greatest intensity of suffering, and it was not absent for a moment.

After consultation with Professor Wallace, Drs. S. W. Gross, William Pepper, S. Weir Mitchell, and James H. Hutchinson, and with their concurrence, I decided to open the stomach. Accordingly, at 4 P. M., June 25th, in the presence and with the assistance of the gentlemen just mentioned, and Drs. J. H. Brinton, Townsend, and Hearn, and Mr. Johnston, Mr. Gemrig, and Mr. Newcomb, the operation was performed. On account of the low condition of the patient, and to avoid vomiting, it was thought highly important to dispense with an anæsthetic; but he insisted upon its administration, preferring to incur additional risk rather than suffer pain. Chloroform was therefore administered by Dr. Ralph M. Townsend. When the patient was fully under its influence, he was placed upon his back, the left side being somewhat elevated by means of folded blankets. A curvilinear incision, the convexity of which presented towards the median line, was commenced at the sternal extremity of the seventh intercostal space, and carried downwards and outwards for nearly four inches, exposing the sheath of the rectus muscle, which was slit up on a grooved director. The fibres of the rectus were next separated, partly with the fingers, partly with the scalpel, the cut-

ting edge of the latter being used as little as possible, with the view of avoiding hemorrhage. The posterior lamella of the sheath of the rectus, the transversalis fascia, and the peritoneum were next successively divided on a director, when the stomach was seen projecting below the margin of the liver. It was firmly grasped by the forceps, and a curved needle armed with a silver wire was passed through its anterior wall, in the direction of the vertical line of the body, the points of entry and exit of the needle being about an inch and a quarter apart. Two other needles, armed in the same manner, were then passed from left to right, and made to cross the first at right angles; the wires including that part of the stomach to be opened, which was at a point about two inches to the left of the pylorus. The first wire was then withdrawn, and by means of a pair of scissors the stomach was opened in a perpendicular direction, and to the extent of an inch. The wires previously passed were thus exposed, and by dividing them the two sutures were converted into four.

Figs. 1, 2, and 3, for which I am indebted to Dr. Ralph M. Townsend, will convey a more correct idea of the manner in which the needles

Fig. 1. Fig. 2. Fig. 3.

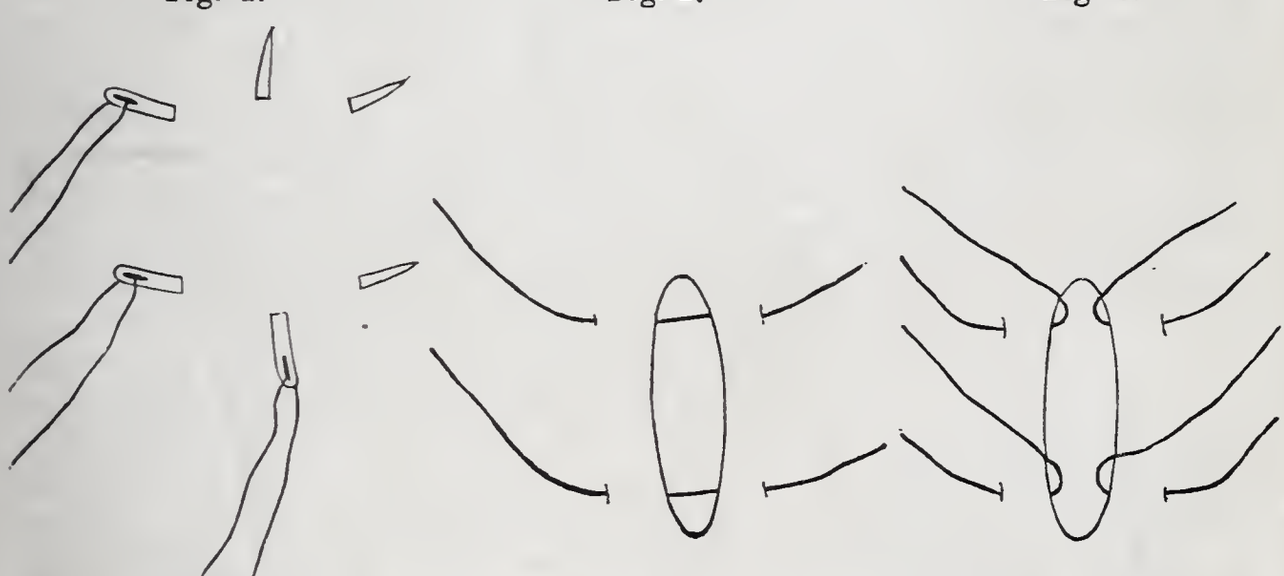


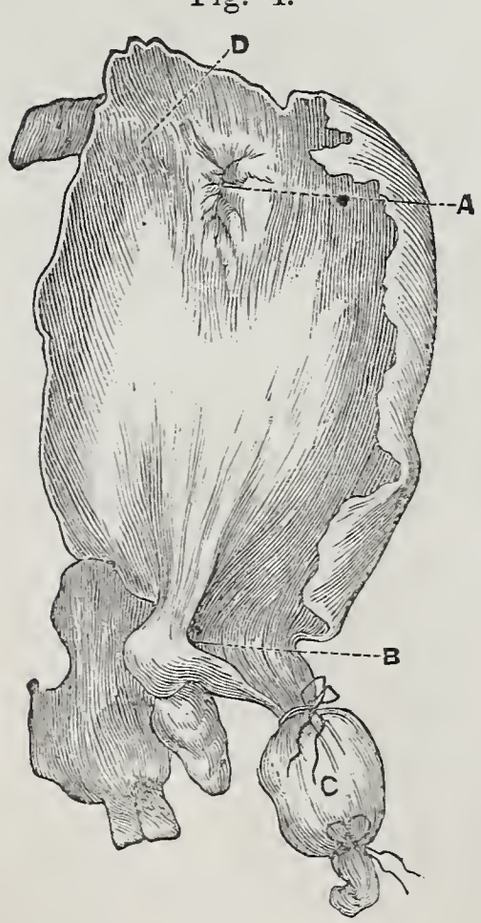
Fig. 1 represents the manner in which the needles were passed through the anterior wall of the stomach.
Fig. 2 represents the first suture withdrawn and the stomach laid open.
Fig. 3 shows the wires divided, and ready to be attached to the abdominal walls.

were passed and the sutures made, than the most detailed description. This mode of securing the stomach was the suggestion of Dr. S. Weir Mitchell, and I find it is essentially the same as that employed in several of the recorded operations of gastrotomy.

After the stomach was opened, constant traction was made upon it, in order that there might be no escape of fluid into the peritoneal cavity. The viscus was now attached to the edges of the opening in the abdominal walls, numerous silver sutures being employed for this purpose, thereby securing the most accurate approximation. A tube with a single flange, such as is employed when establishing gastric fistula in dogs, was inserted into the stomach, the flange resting upon the edges of the external wound, and confined in its position by means of tapes passed around the body. The wound through the abdominal parieties was then closed by ordinary sutures, and with this step the operation was concluded.

Immediately after the operation a small quantity of beef extract was gently thrown into the stomach, and followed in fifteen minutes by a little brandy and water. The patient recovered from the influence of chloroform well, although evidently much prostrated, and, the moment his consciousness returned, he seemed to realize that death was near at hand. He was put to bed, wrapped in blankets, and bottles of hot water placed at his feet. Directions were given to inject a drachm of beef extract into the stomach every fifteen minutes, and to administer an enema of brandy every half hour. At six o'clock he began to sink. Respiration was 14; pulse 62, and extremely feeble. After 7 o'clock beef extract was injected into the stomach only once in forty-five minutes, but it was well retained, and the enemata of brandy were continued. After 8 o'clock he no longer recognized any one, but lay upon his back, with half-closed eyes, not taking notice of anything. At 9 o'clock his respiration was ten in the minute; pulse 30, and almost imperceptible; at 10 o'clock there was a profuse discharge of a dark grumous liquid from the stomach, which apparently being increased by the introduction of the beef extract, it was discontinued. The surface of the body was bedewed with a clammy perspiration; the extremities were cold, the eyes sunken, and the pupils did not respond to light. The pulse had risen to 90, the respiration had sunk to 8. At 2 A. M. respiration was 5 to the minute; pulse could not be detected at the wrist, although the heart was beating feebly 45 times in the minute, which sank to 28 at 2.30 A. M. From ten to fifteen minutes after the administration of brandy by the stomach and rectum, the pulsations of the heart were slightly increased in frequency, though not in force. This acceleration, however, was only transitory. At 5.30 A. M. the respiration was 3 and the heart pulsations 12 to the minute. Dissolution was evidently near at hand, and in half an hour he expired.

Fig. 4.



Post-mortem nine hours after death.—Abdominal cavity alone opened; body extremely emaciated; no fat in the meshes of the omentum, nor in the areolar tissue of the abdomen; small intestines greatly contracted and empty; peritoneum perfectly smooth, and uninjected, presenting no signs of inflammation; liver, spleen, kidneys, and all the internal viscera normal; no enlargement of any of the lymphatic glands. The stomach, part of the œsophagus, duodenum, and that portion of the abdominal parieties through which the incisions were made, were removed. There was a dense, firm stricture of the œsophagus just within its cardiac orifice, which produced such complete obliteration of its calibre as scarcely to admit of the passage of a probe. No evidence of ulceration; stomach contracted, and empty, its mucous lining of a healthy tint. The opening made was about two inches from the pyloric valve. A critical exam-

ination showed that there had been accurate approximation of the stomach to the abdominal parietes, and no evidence could be detected of any tension or strain having been put upon the sutures. A microscopical examination of the substance of the stricture kindly made by Dr. Pepper and Dr. Tyson, gave no evidence as to its nature, except that it probably was not cancerous.

Fig. 4, from a drawing by Dr. Townsend, represents the stomach laid open along its posterior wall, and a portion of the abdominal walls with two of the costal cartilages. A. Cardiac orifice. B. Artificial opening. C. Duodenum.

Remarks.—That gastrotomy under certain circumstances is proper there can be no doubt, but it was with the greatest reluctance that the importunities of the patient and his friends were yielded to, and the responsibility imposed was one which I would gladly have avoided. I now regret, however, that I did not propose the operation as soon as the patient became unable to take solid food, and before the vital powers were undermined by prolonged starvation. So great is my conviction that the procedure is justifiable, and to be regarded as one of the established operations of surgery, that I would have no hesitation in resorting to it in any case of impending starvation from non-cancerous stricture of the œsophagus, provided inanition had not reached a stage which rendered the case hopeless; and I may state that Drs. S. W. Gross, William Pepper, and S. Weir Mitchell entertain similar views.

This is the first operation of gastrotomy for obstruction of the œsophagus performed in this country, and is the tenth on record. Dr. Fenger, of Copenhagen, reports one case in the *Archiv. fur Path. Anat. und Physiol.*, 1854, vol. vi. p. 350; Mr. Sydney Jones, two cases, the first recorded in the *Transactions of the Pathological Society*, vol. xi. p. 101; the second in the *Lancet* of Dec. 16th, 1866; Mr. Arthur E. Durham, one case, reported in the *Guy's Hospital Reports* for 1868; M. Sédillot, of Strasbourg, has operated in two cases, the first reported in his *Traité de Médecine Opératoire*, tom. II., p. 272, the second in the *Gazette des Hôpitaux*, 1853; Mr. Forster records two cases, the results of which may be found in the third series, vols. iv. v. of *Guy's Hospital Reports*, and Mr. Curling one case, published in the *London Hospital Reports*, vol. iii. p. 218.

As to the manner of operating, there seems to be no essential difference. M. Sédillot preferred the method followed by himself—that is, through the rectus muscle. Mr. Durham seems to regard it as important that the external incision should be over the left linea semilunaris, and that the stomach should be entered near the greater curvature; but I deemed it proper to make the opening near the pylorus, since at that point there is the least motion of the organ, and, consequently, its connection with the abdominal parieties would be less likely to be disturbed. In Mr. Cooper Forster's first case he made his incision "over the course of the left linea semilunaris," and in his second case he "made an incision about two inches in length along the outer edge of the rectus muscle in the left hypochondriac region, commencing at the cartilages and opposite the space between the seventh and eighth ribs." Mr. Sydney Jones began his incision "at the inner border of the ninth rib, and carried it vertically downward." But the termination of all the cases having been the same, no advantage can well be claimed for any particular line

of incision. Mr. Jones' result was probably the best, his patient surviving twelve days, when he died of pneumonia.

The case now recorded being one of syphilitic and not of cancerous origin, if operated upon earlier, would have been a fair test of the value of gastrotomy, with a view, not only to the prolongation of life, but to an ultimate cure. Could life have been maintained through the agency of a gastric fistule, opportunity would have been afforded for the more effectual treatment of the stricture, and it is not impossible that the functions of the œsophagus might have been permanently re-established.

The time during which life was sustained by means of nutritious enemata in this case is a point of great interest and practical value. The mother, in whose statements I repose the utmost confidence, asserts that, for six weeks previous to his death not a drachm of any fluid whatever entered his stomach, and for six months antecedent to the operation he certainly partook of no solid food. It must also be borne in mind that, under the most favorable conditions, the amount of nutriment finding its way into the stomach was exceedingly small, and of itself utterly inadequate to the wants of the system. In reality, therefore, the economy drew almost its exclusive supply from the rectum, for a period of much longer duration than six weeks. Indeed, there seemed to be a certain law of compensation, and an accommodation to the exigencies of the occasion, the absorptive power of this man's rectum being certainly greater than is generally thought to belong to that portion of the alimentary canal. The case mentioned by Dr. Barlow, where life was sustained by enemata alone for seventy days, would seem to confirm this view. The rectum being supposed incapable of rendering aliments fit for absorption, Dr. Gull has proposed that the food, previous to injection, be mixed with pepsin. I am not aware, however, that any experiments have been made with the view of testing the value of this suggestion.

It will have been remarked that food was introduced into the stomach shortly after its having been opened. The propriety of such a step is questioned by Mr. Durham, and objections can certainly be urged against it. But it was manifestly proper in this case, as the man was already on the brink of the grave, and death was imminent from the want of nutriment. It was not an experiment that could be performed with any degree of propriety in this instance, as the only chance remaining was that the food brought in contact with the gastric mucous membrane would be quickly absorbed, and bring fresh life to waning vitality. When death from inanition is not threatened, it might be well to nourish the patient for a few days by the rectum, until the stomach accommodates itself to its novel relations, but assuredly no such course should be pursued in cases similar to that now recorded.

In conclusion, I must express my indebtedness to my pupil, Mr. Hermann W. Newcomb for the above accurately drawn up history of my case.